

safety consultant who has 37 years of experience working on amusement park ride safety issues.

In his report, Avery summarized his opinion as follows:

It is my opinion within a reasonable degree of certainty the incident involving Shannon Lael on Jul[y] 9, 2006 was foreseeable and preventable and but for the failures of Six Flags operations and maintenance personnel this incident would not have occurred. Six Flags had control of operations, inspections and maintenance. Six Flags knew there were recurring failures with the gas shocks and essentially waited for it to happen and be reported by a ride operator or discovered during pre-opening inspections.

At his deposition, Avery testified that deposition testimony of Six Flags maintenance personnel revealed that Six Flags had knowledge of ongoing gas shock failures on the Highland Fling over a period of years. Six Flags addressed these failures by keeping a backup supply of shocks for the Highland Fling on hand and placing a sign on a gondola with a failed gas shock to prevent its use. Avery testified that because of the history of known gas shock failures, it was foreseeable that a gas shock would fail and a gondola lid would fall while a person was under it. He opined, in essence, that Six Flags' procedure of addressing gas shock failures only *after* they occur places its guests at unnecessary risk.

Avery opined that instead of waiting for a shock to fail and then taking the gondola out of service, Defendant's maintenance personnel should have conducted preventative maintenance of the gondolas using a method he calls a "life history summary." In this method, maintenance personnel would keep track of gas shock failures over a period of months or years, use those data to determine the life expectancy of the gas shocks, and then replace the gas shocks on a schedule based on that life expectancy. Avery opines that this would permit Six Flags personnel to establish a reasonably predictable timeline about the failure rate of the gas shocks and would permit them to replace the shocks before they break. He acknowledged that although this method

would significantly reduce the potential for a gas shock failure, there is always some chance that a gas shock could fail and cause an accident even if the method were being used.

Avery testified that at the last park where he worked, the life history summary technique was used on all parts known to fail so that they could be replaced according to their known failure timeline. He also testified that the life history summary method is or has been used at Disney World and the Disney properties, at Universal Studios, and at Busch Gardens. Avery acknowledges that the life history summary method is not described in written standards or regulations, and he is not aware of the life history summary method being subject to a vote by the American Society of Testing and Materials (“ASTM”). He is not aware of it being addressed in any trade publication, industry bulletin, or government regulation. He has not tested the method and testified that it does not have a known or potential rate of error. He has not inspected the Highland Fling ride.

Defendant now moves to exclude Avery’s opinions under Federal Rule of Evidence 702.

II. LEGAL STANDARD

The admissibility of expert testimony in federal court is governed by Federal Rule of Evidence 702. Rule 702 states, “A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.” This rule imposes a gatekeeping responsibility on the district court, in which the court must ensure that expert testimony is both relevant and reliable. *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S.

137, 147-48 (1999) (citing *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993)). “The proponent of the expert testimony bears the burden to prove its admissibility.” *Menz v. New Holland N. Am., Inc.*, 507 F.3d 1107, 1114 (8th Cir. 2007). “Decisions concerning the admission of expert testimony lie within the broad discretion of the trial court.” *Anderson v. Raymond Corp.*, 340 F.3d 520, 523 (8th Cir. 2003) (quotation marks omitted).

“Rule 702 favors admissibility if the testimony will assist the trier of fact, and doubts regarding whether an expert’s testimony will be useful should generally be resolved in favor of admissibility.” *Clark v. Heidrick*, 150 F.3d 912, 915 (8th Cir. 1998) (quotation marks and citations omitted). “‘Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.’” *Kudabeck v. Kroger Co.*, 338 F.3d 856, 862 (8th Cir. 2003) (quoting *Daubert*, 509 U.S. at 596). However, “[w]here ‘opinion evidence . . . is connected to existing data only by the *ipse dixit* of the expert,’ a district court ‘may conclude that there is simply too great an analytical gap between the data and the opinion proffered.’” *Smith v. Cangieter*, 462 F.3d 920, 924 (8th Cir. 2006) (quoting *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997)).

III. DISCUSSION

Defendant does not challenge Avery’s qualifications as an expert. However, Defendant argues that Avery’s testimony is inadmissible under Rule 702 because the his opinions are not based on sufficient facts or data, are not the product of reliable principles and methods, and are not the result of reliable application of the principles and methods to the facts of this case.

It appears to the Court that Avery is offering two distinct opinions. First, Avery opines that Six Flags should have implemented the life history summary method as a preventative maintenance measure for the gas shocks on the Highland Fling, as a means of reducing the

foreseeable risk of accidents like Plaintiff's. Second, Avery opines that, to a reasonable degree of certainty, Plaintiff's accident would not have occurred but for the failure of Six Flags to implement such a method. Although the parties did not do so, the Court will consider the two opinions separately.

A. Avery's Opinion That Six Flags Should Have Implemented the Life History Summary Method as a Preventative Maintenance Measure

The Court finds that Avery's opinion that Six Flags should have implemented the life history summary method as a preventative maintenance measure, as a means of reducing the risk of accidents like Plaintiffs, satisfies the requirements of Rule 702.

First, the opinion is based on sufficient facts or data. "As a general rule, the factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility, and it is up to the opposing party to examine the factual basis for the opinion in cross-examination." *Nebraska Plastics, Inc. v. Holland Colors Americas, Inc.*, 408 F.3d 410, 416 (8th Cir. 2005) (quoting *Hartley v. Dillard's, Inc.*, 310 F.3d 1054, 1061 (8th Cir. 2002)). However, "if the expert's opinion is so fundamentally unsupported that it can offer no assistance to the jury, it must be excluded." *Id.* An expert opinion is fundamentally unsupported when it "fails to consider the relevant facts of the case." *Id.*

The record shows that Avery considered (and relied on) the facts that were relevant to his opinion that Six Flags should have implemented the life history summary method for the gas shocks on the Highland Fling to reduce the risk of accidents like Plaintiff's. First, Avery relied on the deposition testimony of Six Flags maintenance personnel showing that there had been a history of ongoing gas shock failures on the Highland Fling and that Six Flags' procedure was to replace the gas shocks only *after* they failed. Second, Avery relied on facts showing that a gas shock failure on the Highland Fling could cause a gondola lid to fall and cause an injury to

someone boarding the ride. Specifically, Avery relied on deposition testimony and documentation describing how the gas shocks operate to keep the gondola lids up on the Highland Fling ride, deposition testimony showing how the Highland Fling loading process occurs, the Six Flags incident report describing the accident, and Plaintiff's description of the accident. Third, Avery considered the fact that other amusement parks dealing with ongoing parts failures use the life history summary method to reduce the risk of such failures. Finally, Avery considered the ASTM standard stating that the ASTM standards do not address all safety concerns and that the user is responsible for establishing appropriate safety practices.

Defendant emphasizes that Avery did not base his theory on the safety or inspection records for the Highland Fling; did not inspect the ride; and does not rely on written standards, regulations, studies, or testing. However, these facts seem only marginally, if at all, relevant to this opinion. Avery does not suggest that Six Flags failed to perform adequate inspections. Instead, he testified that this is a situation in which a gas shock could pass inspection in the morning and then fail later in the day. As to the applicable regulations and standards, it is clear that Avery is familiar with them but notes that the ASTM standard does not address all possible safety concerns. To the extent that Defendant believes that Avery's failure to rely on these or other facts undermines his opinion, Defendant may challenge the basis for the opinion through cross-examination.

Second, I find that Avery's opinion that Six Flags should have used the life history summary method is the product of reliable principles that have been reliably applied to the facts of this case. In arguing that the Avery's opinion is unreliable, Defendant relies primarily on *Daubert*, in which the Supreme Court outlined four factors that the district court may consider in assessing the reliability of scientific expert testimony: (1) whether the theory or technique can be

(and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate for error of the theory or technique; and (4) whether the theory or technique has received general or widespread acceptance. 509 U.S. at 593-94. However, the Supreme Court has recognized that “[t]he factors identified in *Daubert* may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert’s particular expertise, and the subject of his testimony,” *Kumho Tire Co., Ltd.*, 526 U.S. at 150 (1999). It noted that “the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.” *Id.* at 152.

Relying on the *Daubert* factors, Defendant emphasizes that Avery was not aware of any testing, peer review, or rate of error related to the life history summary method. However, the Court finds that this is a situation in which the expert’s experience, in conjunction with the fourth *Daubert* factor, predominates over the other *Daubert* factors and demonstrates the reliability of the opinion. See *Ayers Oil Co. v. American Business Brokers, Inc.*, No. 2:09 CV 02 DDN, 2010 WL 2990113, at *4 (E.D. Mo. July 27, 2010) (holding opinions were admissible based on the expert’s “extensive experience” despite the absence of objective testing or peer review; stating, “the four *Daubert* factors cannot be applied to every expert in every case, and in certain fields, experience in the industry is the predominant, if not sole, basis for reliable expert testimony”). Avery is not espousing a novel theory unheard of in the industry at issue, nor does his opinion involve complex technical matters. Avery’s theory is simple: that when there are known equipment failures on a ride that might cause an accident, the ride operator should track the equipment failures and develop a schedule under which it attempts to replace the parts *before* they fail. Avery testified that this method has been used at numerous other amusement parks for parts known to fail, suggesting that the method has widespread acceptance in the industry.

Although Avery was not aware of any testing, peer review, or rate of error for this method, his opinion is predicated on his knowledge of industry practice and his experience with the very program he espouses, and the Court finds it sufficiently reliable to be admissible.

The Court also rejects Defendant's argument that Avery's opinion is inconsistent, and thus unreliable, because he opined that Plaintiff's injury was foreseeable, yet admitted that he was unaware of any prior incidents like Plaintiff's. The fact that the past gas shock failures did not happen to occur while a person was standing under the lid of a gondola does not mean it was unforeseeable that they could do so in the future, particularly given the ride's loading procedures.

In sum, the Court finds that the principles underlying Avery's opinion that Six Flags should have used the life history summary method, and his application of those principles, are sufficiently reliable to render this opinion admissible under the standards of *Daubert* and *Kumho*. The appropriate weight to give that opinion is a question for the jury. Possible flaws in the factual basis for the opinion or in Avery's assumptions and methodology can be addressed through cross-examination and contrary testimony. *See, e.g., Filbert v. Joseph T. Ryerson & Son, Inc.*, No. 4:10CV1189 JCH, 2012 WL 2154347, at *3 (E.D. Mo. June 13, 2012) ("Defendant's assertions concerning flaws in [the expert's] methodology or underlying assumptions are proper subjects for [the Defendant's] own expert testimony and for thorough cross-examination before the trier of fact") (quotation marks omitted); *Harrington v. Sunbeam Products, Inc.*, No. 4:07-CV-1957 CAS, 2009 WL 701994, at *12 (E.D. Mo. March 13, 2009) (stating that the defendant's "assertions concerning flaws in [the expert's] methodology and the factual basis of his testimony . . . go to the weight and credibility of his testimony as opposed to its admissibility and are proper subjects for thorough cross-examination before the trier of fact.").

B. Avery's Opinion that Plaintiff's Accident Would Not Have Occurred but for the Failure of Six Flags to Implement the Life History Summary Method

The Court next turns to Avery's opinion that, to a reasonable degree of certainty, Plaintiff's accident would not have occurred but for the failure of Six Flags to implement the life history summary method. That opinion does not satisfy the standards of Rule 702 because it is so fundamentally unsupported by facts or data that it can offer no assistance to the jury.

Avery's opinion is not based on specific facts regarding the particular gas shock at issue here. He did not consider the age of the gas shock that failed here and then determine that a gas shock of that age would have been replaced under the life history summary method. Instead, Avery's opinion is based on the idea that the life history summary method would have prevented the gas shock failure here because it would have prevented *all*, or nearly all, gas shock failures. However, Avery has no facts or data that would allow him to make that determination.

Avery has no data whatsoever regarding the timeline on which gas shocks fail or how predictable that timeline is. It may be that 99% of gas shock failures on the Highland Fling occur only after the gas shock has been in use for some reasonable length of time, such that replacing the gas shocks before that time has elapsed would prevent all or nearly all failures. On the other hand, it may be that the timing of gas shock failures on the Highland Fling is random or highly variable, with a significant percentage of the failures occurring even on gas shocks that have not yet been used for any reasonable length of time. Under such circumstances, it would likely be difficult or impossible to develop a replacement schedule that would prevent all or nearly all failures. Avery has no facts or data that would permit him to determine which of these scenarios applies to the gas shocks on the Highland Fling. He does not rely on any data regarding the past gas shock failures on the Highland Fling ride; does not rely on any data regarding gas shock failure patterns on similar rides; does not rely on data regarding gas shock failure patterns

generally; does not rely on any data regarding failure patterns of equipment parts similar to gas shocks; and does not rely on any personal knowledge or experience related to gas shock failure patterns. In the absence of any such data or knowledge, it is unclear how Avery could reach the conclusion that the pattern of gas shock failures would follow a sufficiently predictable pattern that the life history summary method could be used to prevent all (or nearly all) such failures. That conclusion appears to be based on speculation or presumption rather than on facts.

“‘Expert testimony is inadmissible where . . . it is excessively speculative or unsupported by sufficient facts.’” *Onyiah v. St. Cloud State Univ.*, 684 F.3d 711, 720 (8th Cir. 2012) (quoting *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 981 (8th Cir. 2010)). Here, Avery’s opinion that this accident would not have occurred but for Six Flags’ failure to implement the life history summary method is completely unsupported by facts or data and rests entirely on Avery’s speculation and presumptions. Because his opinion is “so fundamentally unsupported that it can offer no assistance to the jury,” it does not satisfy the requirements of Rule 702 and must be excluded. *See Nebraska Plastics, Inc.*, 408 F.3d at 416. *See also Onyiah*, 684 F.3d at 720-21 (affirming exclusion of expert report where the expert failed to consider the facts that were essential to the formation of his opinion).

For all of the above reasons,

IT IS HEREBY ORDERED that Defendant Six Flags Theme Parks, Inc.’s (“Six Flags”) Motion to Exclude Testimony and Opinions of William Avery (Doc. 49) is **GRANTED IN PART AND DENIED IN PART**. With respect to Avery’s opinion that, to a reasonable degree of certainty, Plaintiff’s accident would not have occurred but for the failure of Six Flags to implement the life history summary method, the motion is **GRANTED**. With respect to Avery’s opinion that Six Flags should have implemented the life history summary method as a

preventative maintenance measure for the gas shocks on the Highland Fling, as a means of reducing the foreseeable risk of accidents like Plaintiff's, the motion is **DENIED**.

/s/Shirley Padmore Mensah
SHIRLEY PADMORE MENSAH
UNITED STATES MAGISTRATE JUDGE

Dated: December 12, 2014.